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(54) MUSICAL COMPOSITION INFORMATION DISTRIBUTING DEVICE, ITS  
METHOD AND RECORDING MEDIUM

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a musical composition information distributing device for generating musical composition information corresponding to more than one qualities by changing the contents of the prepared composition information and presenting it to a user.

SOLUTION: The musical composition information distributing device for distributing composition information to an external unit connected to a network is provided with a storage means for storing the first piece of composition information, a receiving means for receiving a composition distribution request which comprises musical composition

identifying information and unit identifying information from the external unit connected to the network, a reading means for reading the first piece of composition information from the storage means based on the composition identifying information, a form converting means for converting the first piece of composition information into the second piece of composition information having a file form to be reproduced in the external unit based on the unit identifying information and a transmitting means for transmitting musical composition information to the external unit by following the contents of the composition distribution request.

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## CLAIMS

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[Claim(s)]

[Claim 1] A storage means to be musical piece information distribution equipment which distributes musical piece information to the external instrument connected on the network, and to memorize the 1st musical piece information, A receiving means to receive the musical piece distribution demand from the external instrument connected on the network which includes musical piece identification information and instrument identification information at least, The read-out means which reads the 1st musical piece information from said storage means based on said musical piece identification information, Musical piece information distribution equipment which has a formal conversion means by

which said 1st musical piece information is convertible for the 2nd musical piece information on a refreshable file format with said external instrument, and a transmitting means to transmit musical piece information to said external instrument according to the content of said musical piece distribution demand, based on said instrument identification information.

[Claim 2] Furthermore, musical piece information distribution equipment according to claim 1 which has a charge decision means of distribution to determine the charge of musical piece information distribution, and an accounting means to charge the charge of distribution which said charge decision means of distribution determines to the user of said external instrument, according to the file format of the musical piece information which said transmitting means transmits.

[Claim 3] Said 1st musical piece information is musical piece information distribution equipment according to claim 1 or 2 said whose 2nd musical piece information it is the musical piece information on a refreshable file format in electrophone, and is the musical piece information on a refreshable file format in a cellular phone.

[Claim 4] A storage means to be musical piece information distribution

equipment which distributes musical piece information to the external instrument connected on the network, and to memorize the 1st musical piece information, A receiving means to receive the musical piece distribution demand from the external instrument connected on the network which contains musical piece identification information and musical piece quality information at least, Based on said musical piece identification information, the read-out means which reads the 1st musical piece information from said storage means, and by reducing the amount of information of said 1st musical piece information based on said musical piece quality information Musical piece information distribution equipment which has a quality conversion means to change into the 2nd musical piece information that quality differs, and a transmitting means to transmit musical piece information to said external instrument according to the content of said musical piece distribution demand.

[Claim 5] Furthermore, musical piece information distribution equipment according to claim 4 which has a charge decision means of distribution to determine the charge of musical piece information distribution, and an accounting means to charge the charge of distribution which said charge decision means of distribution determines to the user of said external instrument,

according to the quality of the musical piece information which said transmitting means transmits.

[Claim 6] A storage means to be musical piece information distribution equipment which distributes musical piece information to the external instrument connected on the network, and to memorize the 1st musical piece information, A receiving means to receive the musical piece distribution demand from the external instrument connected on the network which contains musical piece identification information, instrument identification information, and musical piece quality information at least, Based on said musical piece identification information, the read-out means which reads the 1st musical piece information from said storage means, and by reducing the amount of information of said 1st musical piece information based on said musical piece quality information A quality conversion means to change into the 2nd musical piece information that quality differs, and a formal conversion means by which said 2nd musical piece information is convertible for the 3rd musical piece information on a refreshable file format with said external instrument based on said instrument identification information, Musical piece information distribution equipment which has a transmitting means to transmit musical piece information to said external

instrument according to the content of said musical piece distribution demand.

[Claim 7] Furthermore, musical piece information distribution equipment according to claim 6 which has a charge decision means of distribution to determine the charge of musical piece information distribution, and an accounting means to charge the charge of distribution which said charge decision means of distribution determines to the user of said external instrument, according to the file format and quality of musical piece information which said transmitting means transmits.

[Claim 8] Said 1st musical piece information is musical piece information distribution equipment according to claim 6 or 7 said whose 2nd musical piece information it is the musical piece information on a refreshable file format in electrophone, and is the musical piece information on a refreshable file format in a cellular phone.

[Claim 9] In the Network Server which has a storage means to memorize the 1st musical piece information It is the musical piece information distribution approach which distributes musical piece information to the external instrument connected on the network. The receiving process which receives the musical piece distribution demand from the external instrument connected on the

network which includes musical piece identification information and instrument identification information at least, The read-out process which reads the 1st musical piece information from said storage means based on said musical piece identification information, The musical piece information distribution approach of having the formal conversion process that said 1st musical piece information is convertible for the 2nd musical piece information on a refreshable file format with said external instrument, and the transmitting process which transmits musical piece information to said external instrument according to the content of said musical piece distribution demand based on said instrument identification information.

[Claim 10] In the Network Server which has a storage means to memorize the 1st musical piece information It is the musical piece information distribution approach which distributes musical piece information to the external instrument connected on the network. The receiving process which receives the musical piece distribution demand from the external instrument connected on the network which contains musical piece identification information and musical piece quality information at least, Based on said musical piece identification information, the read-out process which reads the 1st musical piece information



from said storage means, and by reducing the amount of information of said 1st musical piece information based on said musical piece quality information The musical piece information distribution approach of having the quality conversion process changed into the 2nd musical piece information that quality differs, and the transmitting process which transmits musical piece information to said external instrument according to the content of said musical piece distribution demand.

[Claim 11] In the Network Server which has a storage means to memorize the 1st musical piece information It is the musical piece information distribution approach which distributes musical piece information to the external instrument connected on the network. The receiving process which receives the musical piece distribution demand from the external instrument connected on the network which contains musical piece identification information, instrument identification information, and musical piece quality information at least, Based on said musical piece identification information, the read-out process which reads the 1st musical piece information from said storage means, and by reducing the amount of information of said 1st musical piece information based on said musical piece quality information The quality conversion process

changed into the 2nd musical piece information that quality differs, and the formal conversion process that said 2nd musical piece information is convertible for the 3rd musical piece information on a refreshable file format with said external instrument based on said instrument identification information, The musical piece information distribution approach of having a transmitting means to transmit musical piece information to said external instrument according to the content of said musical piece distribution demand.

[Claim 12] In the Network Server which has a storage means to memorize the 1st musical piece information It is the musical piece information distribution procedure which distributes musical piece information to the external instrument connected on the network. The receiving procedure of receiving the musical piece distribution demand from the external instrument connected on the network which includes musical piece identification information and instrument identification information at least, The read-out procedure which reads the 1st musical piece information from said storage means based on said musical piece identification information, The formal conversion procedure which can change said 1st musical piece information into the 2nd musical piece information on a refreshable file format with said external instrument based on said instrument

identification information, The medium which recorded the program for making a computer perform the musical piece information distribution procedure of having the transmitting procedure of transmitting musical piece information to said external instrument according to the content of said musical piece distribution demand.

[Claim 13] In the Network Server which has a storage means to memorize the 1st musical piece information It is the musical piece information distribution procedure which distributes musical piece information to the external instrument connected on the network. The receiving procedure of receiving the musical piece distribution demand from the external instrument connected on the network which contains musical piece identification information and musical piece quality information at least, based on said musical piece identification information by [ which read the 1st musical piece information from said storage means ] carrying out reading appearance and reducing the amount of information of said 1st musical piece information based on a procedure and said musical piece quality information The medium which recorded the program for making a computer perform the musical piece information distribution procedure of having the quality conversion procedure changed into the 2nd musical piece

information that quality differs, and the transmitting procedure of transmitting musical piece information to said external instrument according to the content of said musical piece distribution demand.

[Claim 14] In the Network Server which has a storage means to memorize the 1st musical piece information It is the musical piece information distribution procedure which distributes musical piece information to the external instrument connected on the network. The receiving procedure of receiving the musical piece distribution demand from the external instrument connected on the network which contains musical piece identification information, instrument identification information, and musical piece quality information at least, based on said musical piece identification information by [ which read the 1st musical piece information from said storage means ] carrying out reading appearance and reducing the amount of information of said 1st musical piece information based on a procedure and said musical piece quality information The quality conversion procedure changed into the 2nd musical piece information that quality differs, and the formal conversion procedure which can change said 2nd musical piece information into the 3rd musical piece information on a refreshable file format with said external instrument based on said instrument identification

information, The medium which recorded the program for making a computer perform the musical piece information distribution procedure of having a transmitting means to transmit musical piece information to said external instrument according to the content of said musical piece distribution demand.

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## DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the musical piece information distribution equipment which changes musical piece information and is distributed to an external connection device through a network in more detail about musical piece information distribution equipment.

[0002]

[Description of the Prior Art] When purchasing musical piece information, such as data of a refreshable MIDI (MUSICAL INSTRUMENT DIGITAL INTERFACE) format, and data of an MP3 (MPEG LAYER 3) format, by electrophone, computer, etc. in recent years, there is an information distribution system which can download for pay what was recorded on record media, such as CD-ROM, from a server through networks, such as the Internet, to the change purchased at a store.

[0003] In such an information distribution system, only the musical piece information on one kind of quality is prepared to one musical piece in many

cases. Therefore, for the user who wishes the purchase of musical piece information, although the musical piece information on low quality is enough, a high tariff may have to be paid and the musical piece information on high quality may have to be purchased.

[0004] With the quality of musical piece information, not only the tone quality when reproducing musical piece information but some of amount of information added to musical piece information is included here. The data for controlling the score data of the musical piece corresponding to musical piece information, the sound source in musical piece information, etc. as information added to musical piece information etc. are included. Let what has many amount of information added to musical piece information be quality data on these descriptions.

[0005] Moreover, the musical piece information for cellular phones and electronic comfort dexterous musical piece information are another sales in many cases. Generally, the musical piece information for cellular phones and electronic comfort dexterous musical piece information are recorded by different file format, and cannot reproduce musical piece information on the file format corresponding to the device of another side by one device.

[0006] Then, a user needs to recognize and purchase the musical piece

information recorded by refreshable file format by the owned device, and the activity which looks for refreshable musical piece information out of very much musical piece information is needed. Moreover, it is necessary to access the homepage which sells refreshable musical piece information in accordance with a device with a user vessel.

[0007]

[Problem(s) to be Solved by the Invention] By one homepage, if it is going to sell the musical piece information on various file format in various quality corresponding to various devices, much files must be prepared per musical piece and it is necessary to increase the storage capacity of a server.

[0008] Furthermore, when the class (quality and file format) of musical piece information treated by one homepage increases, it becomes still more difficult to choose refreshable musical piece information by the device which the user owns, and it has the danger of decreasing purchase volition.

[0009] The object of this invention is offering the musical piece information distribution equipment which can create two or more musical piece information corresponding to the quality of a class, and a user's can be shown by changing the content or amount of information of musical piece information currently



prepared beforehand.

[0010] Moreover, other objects of this invention are offering the musical piece information distribution equipment which can distribute the musical piece information on the quality according to a user-terminal class or a receiving environment by the suitable amount of accounting according to quality.

[0011] The object of further others of this invention is offering the musical piece information distribution equipment which can create two or more musical piece information on a refreshable file format by the device of a class by changing the file format of the musical piece information currently prepared beforehand.

[0012]

[Means for Solving the Problem] According to one viewpoint of this invention, musical piece information distribution equipment A storage means to be musical piece information distribution equipment which distributes musical piece information to the external instrument connected on the network, and to memorize the 1st musical piece information, A receiving means to receive the musical piece distribution demand from the external instrument connected on the network which includes musical piece identification information and instrument identification information at least, The read-out means which reads

the 1st musical piece information from said storage means based on said musical piece identification information, Based on said instrument identification information, it has a formal conversion means by which said 1st musical piece information is convertible for the 2nd musical piece information on a refreshable file format with said external instrument, and a transmitting means to transmit musical piece information to said external instrument according to the content of said musical piece distribution demand.

[0013] According to other viewpoints of this invention, moreover, musical piece information distribution equipment A storage means to be musical piece information distribution equipment which distributes musical piece information to the external instrument connected on the network, and to memorize the 1st musical piece information, A receiving means to receive the musical piece distribution demand from the external instrument connected on the network which contains musical piece identification information and musical piece quality information at least, Based on said musical piece identification information, the read-out means which reads the 1st musical piece information from said storage means, and by reducing the amount of information of said 1st musical piece information based on said musical piece quality information Musical piece

information distribution equipment which has a quality conversion means to change into the 2nd musical piece information that quality differs, and a transmitting means to transmit musical piece information to said external instrument according to the content of said musical piece distribution demand.

[0014] According to the viewpoint of further others of this invention, moreover, musical piece information distribution equipment A storage means to be musical piece information distribution equipment which distributes musical piece information to the external instrument connected on the network, and to memorize the 1st musical piece information, A receiving means to receive the musical piece distribution demand from the external instrument connected on the network which contains musical piece identification information, instrument identification information, and musical piece quality information at least, Based on said musical piece identification information, the read-out means which reads the 1st musical piece information from said storage means, and by reducing the amount of information of said 1st musical piece information based on said musical piece quality information A quality conversion means to change into the 2nd musical piece information that quality differs, and a formal conversion means by which said 2nd musical piece information is convertible for the 3rd

musical piece information on a refreshable file format with said external instrument based on said instrument identification information, It has a transmitting means to transmit musical piece information to said external instrument according to the content of said musical piece distribution demand.

[0015]

[Embodiment of the Invention] Drawing 1 is the block diagram showing an example of the configuration of the musical piece information distribution system 1 by the example of this invention. It is constituted by connecting the user terminal 4 which consists of pocket communication terminal (Personal Digital Assistant) 4b for information communication terminal 4a or radiocommunication information distribution equipment (management server) 2 and for wire communications through a communication network 3 or communication lines, such as the Internet.

[0016] Information distribution equipment 2 is a World-Wide-Web (WWW) server on the Internet which consists of for example, computers PC etc., and it has memorized much musical piece information etc. so that it may mention later. This information distribution equipment 2 performs pay service which distributes the musical piece information accumulated to a user terminal 4 according to a

demand of a user.

[0017] A user terminal 4 is constituted by information communication terminal 4a and Personal Digital Assistant 4b, and can be connected to the communication networks 3, such as LAN (Local Area Network), and the Internet, the telephone line. Moreover, through this communication network 3, it can connect with the management server 2 and the musical piece information for which it wishes from the management server 2 can be downloaded. When using Personal Digital Assistant 4b, it connects with a base transceiver station 6 using the radiocommunication circuit 5, and connects with the management server 2 through a communication network 3 from there.

[0018] The user terminal 4 used as a client transmits the command (musical piece demand information) which requires download of musical piece information etc. of the management server 2 through a communication network 3. The management server 2 receives this musical piece demand information, and distributes the demanded musical piece information to a user terminal 4 through a communication network 3. Download of musical piece information is completed by accumulating into the external storage 16 which a user terminal 4 receives these musical piece information etc., and is shown in below-mentioned

drawing 2 , or RAM13 grade.

[0019] The management server 2 is changed according to a refreshable file format by the user terminal which has connected the file format of the accumulated musical piece information so that it may explain in full detail behind in the case of download of the above-mentioned musical piece information. furthermore, a user's hope -- doubling -- the content or amount of information (quality) of musical piece information -- a frog -- things are made.

[0020] Drawing 2 is the block diagram showing the concrete hardware configuration of the computer PC which constitutes a user terminal 4 or the management server 2. Hereafter, Computer PC is explained focusing on the case where it is used as information communication terminal 4a (user terminal 4).

[0021] A detector 17, a display circuit 19, RAM13, ROM12 and CPU14, external storage 16, the communication link interface 25, MIDI interface 23, a timer 15, and the sound-source circuit 21 are connected to a bus 11.

[0022] the musical piece name a user expects download using the handler (input means) 18 connected to a detector 17, a singer name, and others -- required information can be inputted. If a handler 18 can output the signal according to a user's inputs, such as a mouse, a keyboard, a keyboard, a joy stick, and a switch,

what kind of thing is sufficient as it. Moreover, two or more input means may be connected.

[0023] It connects with a display 20 and a display circuit 19 can display various information on a display 20.

[0024] External storage 16 is connected to a bus 11 through the interface including the interface for external storage. External storage 16 is for example, a floppy disk drive (FDD), a hard disk drive (HDD) and a magneto-optic-disk (MO) drive, a CD-ROM (compact disk-read only memory) drive, a DVD (Digital Versatile Disc) drive, etc. To external storage 16, the program for realizing two or more musical piece information and this example etc. is memorizable.

[0025] RAM13 has the working area for CPU14 which memorizes musical piece information, such as a flag, a register or a buffer, and MIDI performance data, etc. To ROM12, the program for realizing various parameters and a control program, or this example etc. is memorizable. In this case, there is no need of memorizing a program etc. to external storage 16 in piles. CPU14 performs operation or control according to ROM12 or the control program memorized by external storage 16.

[0026] It connects with CPU14 and the bus 11, and a timer 15 directs a basic

clock signal, interruption processing timing, etc. to CPU14.

[0027] Musical piece information etc. is memorized by an outboard recorder 16, RAM13, or ROM12. Musical piece information can be outputted and inputted to the exterior through the communication link interface 25.

[0028] It can connect with other musical instruments, an audio equipment, a computer, etc., and MIDI interface 23 can transmit and receive a MIDI signal at least. MIDI interface 23 may be constituted using general-purpose interfaces, such as not only the MIDI interface of dedication but RS-232C, USB (Universal Serial Bus), IEEE1394 (IEEE 1394), etc. In this case, you may make it also transmit and receive data other than a MIDI message simultaneously.

[0029] Electrohone 24 is an audio equipment, a musical instrument, etc. which are connected to MIDI interface 23. The gestalt of not only a keyboard instrument but a stringed instrument type, a wind instrument type, a percussion instrument type, etc. is sufficient as the gestalt of electrohone. Moreover, what [ not only ] built sound-source equipment, automatic performance equipment, etc. in one body of electrohone but each is equipment of another object, and may connect each equipment using means of communications, such as MIDI and various networks.



[0030] The sound-source circuit 21 generates a musical-sound signal according to the MIDI signal supplied, and supplies it to a sound system 22. A sound system 22 changes and pronounces the musical-sound signal of the digital format supplied to analog format including a D/A converter and a loudspeaker.

[0031] In addition, the sound-source circuits 21 may be what kind of methods, such as a wave memory method, FM method, a physical model method, a higher-harmonic composite system, a characteristic-frequency-region composite system, and an analog synthesizer method of VCO(Voltage Controlled Oscillator)+VCF(Voltage Controlled Filter)+VCA (Voltage Controlled Amplifier).

[0032] It is moreover, like [ the sound-source circuit 21 may be constituted not only using what is constituted using the hardware of dedication but using a DSP(Digital Signal Processor)+ micro program, and you may make it constitute it from a program of CPU+ software, and ] a sound card.

[0033] Furthermore, you may make it form two or more pronunciation channels, and may make it constitute two or more pronunciation channels from one sound-source circuit per pronunciation channel using two or more sound-source circuits by using one sound-source circuit by time sharing.

[0034] The program for realizing a control program or this example etc. can also

be stored in the hard disk (HDD) in external storage 16. By reading a control program etc. from a hard disk to RAM13, the same actuation as the case where ROM12 is made to memorize a control program etc. can be set to CPU14. If it does in this way, an addition, version up, etc. of a control program etc. can be performed easily.

[0035] Moreover, CD-ROM can also be made to memorize the program for realizing a control program or this example etc. The program for realizing a control program and this example etc. can be copied to a hard disk from CD-ROM. New install and version up of a control program etc. can be performed easily.

[0036] It can connect with the communication networks 3, such as LAN (Local Area Network), and the Internet, the telephone line, and can connect with a server through this communication network 3, and the communication link interface 25 can download the program for realizing musical piece information and a control program, and this example from a server in external storage 16 or RAM13 grades, such as HDD, etc.

[0037] In addition, to use the above-mentioned computer PC as Personal Digital Assistant 4b, MIDI interface 23 and external storage are not necessarily required.

Moreover, the communication link interface 25 needs to be a thing connectable with a communication line on radio at this time. For example, the communication link interface 25 is connectable with the radiocommunication circuit for cellular phones. Furthermore, as long as it is connectable with a communication network 3 not only by a cellular phone but wireless, what kind of thing is sufficient as Personal Digital Assistant 4b.

[0038] In addition, when using the above-mentioned computer PC as a management server 2 (information distribution equipment), sound-source circuit 21 grade is not not necessarily the need. The hardware configuration is almost the same as the case of a user terminal 4. Moreover, in that case, as shown in the external storage 16 of the management server 2 at drawing 6 (A), two or more former musical piece data (musical piece information) MO are memorized.

[0039] The former musical piece data MO are data for reproducing a musical piece, for example, are the information created and recorded by refreshable file format with electrohone. The former musical piece data MO are data of the highest quality which has two or more PERT. With the data of the highest quality here, it has the playback PERT for several refreshable maximum PERT minutes (for example, 128 PERT) by the musical piece playback device of high

performance, and has the detailed pitch change using pitch bend information, and there is tone modification by tone number data (tone information), and it has score data for displaying the detailed score for all PERT etc. Furthermore, you may have detail setting out of the content of a tone by the parameter setup, the detailed II Tempo change by the II Tempo data, the chord progression assignment by the code sequence, change of the detailed velocity (sound volume) by velocity data, etc.

[0040] this example -- this electronic comfort -- the musical piece information MD on various quality is created by deleting specific information from the dexterous former musical piece information MO on the highest quality. Moreover, it also performs changing into a refreshable file format with a cellular phone etc.

[0041] Drawing 3 is a flow chart which shows the processing performed by CPU14 of the management server 2 and a user terminal 4 in the musical piece information distribution system by the example of this invention. The left-hand side in drawing is the processing performed by CPU14 of a user terminal 4, and right-hand side is the processing performed by CPU14 of the management server 2. In addition, the arrow head of a dotted line shows the flow of the data which mind a communication network 3 ( drawing 1 ) and are carried out.

[0042] First, it explains from the user-terminal side processing performed by CPU14 of the left-hand side user terminal 4.

[0043] User-terminal side processing is started at a step SA 1. Then, it progresses to the following step SA 2.

[0044] At a step SA 2, by inputting URL (Uniform Resource Locator) of the management server 2, a user connects with the management server 2 through the Internet 3 (communication network 3), and downloads the file for a musical piece information purchase homepage display from the management server 2. If the file for a musical piece information purchase homepage display is downloaded, the musical piece information purchase homepage containing a musical piece information input screen as shown in a display 20 ( drawing 2 ) at below-mentioned drawing 4 (A) will be displayed. It progresses to the following step SA 3 after that.

[0045] The file for a musical piece information purchase homepage display is a file of for example, a HTML format, and it demands the input of the musical piece demand information RI required for selection of musical piece information etc. ( drawing 5 ) from a user while being able to display it by the usual Internet browser, displaying a musical piece information input screen as shown in

drawing 4 (A) and demanding the purchase of musical piece information from a user. The detail of a musical piece information input screen shown in drawing 4 (A) is mentioned later.

[0046] At a step SA 3, the musical piece demand information RI that a user inputs is transmitted to the management server 2 with the terminal information TI on the terminal proper beforehand memorized by ROM12 or external storage 16 of a user terminal 4. It progresses to the following step SA 4 after that.

[0047] The musical piece demand information RI and terminal information TI are put together as shown in drawing 5 . The information which specifies musical piece information, such as a musical piece name of the musical piece information which wishes the download which a user inputs, and a singer name, is included in the musical piece demand information RI. The terminal information TI is beforehand memorized by ROM12 or external storage 16 of a user terminal 4, and the information for specifying the model of user terminals 4, such as a terminal model name of a terminal proper, is included.

[0048] In addition, a user may enable it to input although it is desirable to memorize beforehand in ROM12 of a user terminal 4 or external storage 16 as mentioned above as for the terminal information TI.

[0049] The input of the musical piece demand information RI is performed using the musical piece information input screen of the musical piece information purchase homepage displayed at a step SA 2.

[0050] At a step SA 4, the musical piece related information which the management server 2 transmits at the below-mentioned step SB 9 is received. The list (it is hereafter called a quality list) of the quality which can purchase the musical piece information demanded at the above-mentioned step SA 3 based on the musical piece related information which received is displayed on a display 20. It progresses to the following step SA 5 after that. The list displayed here is a list as shown in below-mentioned drawing 4 (B) or below-mentioned drawing 4 (C).

[0051] At a step SA 5, a user is urged to determine the musical piece information (purchase article) purchased with reference to the quality list displayed at a step SA 4. If a user chooses and inputs a purchase article, the information on a purchase article will be transmitted to the management server 2, and it will progress to the following step SA 6.

[0052] At a step SA 6, an accounting information input screen as shown in drawing 4 (D) mentioned later is displayed on a display 20, and a user is urged

to input information required for purchase. If accounting information is inputted, the information will be transmitted to the management server 2. Then, it progresses to the following step SA 7.

[0053] Information required for purchase is the information containing accounting information at least. Moreover, although the purchase article is to be downloaded promptly, you may make it mail what recorded the purchase article on the record medium in this example. In that case, it is made to make the information about forwarding of the mailing approach of a purchase article, the shipping date in the case of mailing, etc. input together with accounting information. Furthermore, you may make it make either download or mailing choose, and may enable it to choose both sides.

[0054] If accounting information will be a credit card number, the expiration date of a credit card, the name of a credit card, etc. if it charges with a credit card, and it is for example, bank transfer and a postal transfer, it is the address which sends a transfer form, or a mail address which transmits. Furthermore, if it is accounting by cybermoney, User Information for using cybermoney etc. will be inputted as accounting information.

[0055] At a step SA 7, the purchased musical piece information is downloaded



from the management server 2. If download is completed, it will progress to the following step SA 8.

[0056] User-terminal side processing is ended at a step SA 8.

[0057] Next, the management server side processing performed by CPU14 of the management server 2 on the right-hand side of drawing 3 is explained.

[0058] Management server side processing is started at a step SB 1. It progresses to the following step SB 2 after that.

[0059] At a step SB 2, a connection request is answered from a user terminal and the file for a musical piece information purchase homepage display which a user terminal 4 receives at the step SA 2 of the above-mentioned user-terminal side processing is transmitted on the Internet 3 (communication network 3). It progresses to the following step SB 3 after that.

[0060] It searches with a step SB 3 whether the musical piece demand information RI and the terminal information TI which a user terminal 4 transmits at the step SA 3 of the above-mentioned user-terminal side processing are received, and the former musical piece information MO that it corresponds to the musical piece information which a user demands based on the musical piece demand information RI is memorized by external storage 16 ( drawing 2 ). It

progresses to the following step SB 4 after that.

[0061] At a step SB 4, if the former musical piece information MO which a user demands is memorized by external storage 16 ( drawing 2 ) based on the retrieval result of the above-mentioned step SB 3, it will progress to the step SB 7 shown by the arrow head of YES. If the former musical piece information MO which a user demands is not memorized by external storage 16 ( drawing 2 ), it progresses to the following step SB 5 shown by the arrow head of NO.

[0062] At a step SB 5, a purport without the musical piece which a user demands is notified to a user terminal 4 through the Internet 3 (communication network 3). It progresses to the following step SB 6 after that.

[0063] At a step SB 6, management server side processing is reset, it returns to a step SB 1, and management server processing is resumed.

[0064] At a step SB 7, the file format and quality of the musical piece information MD which can be performed by the user terminal 4 which required the musical piece are determined with reference to the terminal information TI received at the response table and step SB 3 of drawing 6 (B). Then, it progresses to the following step SB 8.

[0065] As shown in drawing 6 (B), it is determined including the object for cellular

phones, and two kinds of tables for electrophones that a response table will use the table corresponding to a user terminal with reference to (it is prepared for every refreshable device or file format), and the terminal information TI. For example, if a user terminal is a cellular phone (it checks for the terminal information TI), the response table for cellular phones will be used. Refreshable quality is recorded on the response table for cellular phones for every personal digital assistant model of "a cellular phone AA 01" and "cellular-phone AB01" - "a cellular phone ZZ99." It is shown that the musical piece information of "O" on the quality is refreshable among drawing, and it is shown that musical piece information on the quality cannot be reproduced by "x."

[0066] For example, although the musical piece information on high quality is unreproducible in "a cellular phone AB01", the musical piece information on inside quality and low quality is refreshable. The list DL of drawing 4 (C) is displayed based on this information.

[0067] the user-terminal device (model) which the terminal information TI shows conversion of file format -- the object for cellular phones, and electronic comfort -- it judges by whether it is belonging to dexterous which table (recorded). For example, if recorded on the table for cellular phones, it will change into a

refreshable file format with a cellular phone.

[0068] In this example, the response table is prepared for every refreshable file format. In addition, although it is not necessary to prepare a response table for every file format, it not necessarily needs to record a refreshable file format for every model in that case.

[0069] At a step SB 8, the price for every quality of the musical piece information which can be performed by the user terminal 4 which was determined at a step SB 7, and which required the musical piece is set up. It progresses to the following step SB 9 after that. Setting out of this price may use what used the price for every quality as the table, defines a base price, calculates it by the predetermined performance approach currently prepared for every quality based on it, and you may make it ask for it. In this example, the price for every quality is recorded on the translation table of below-mentioned drawing 6 (C).

[0070] The musical piece related information which expresses with a step SB 9 the price of the quality of the musical piece information which a user can purchase, and which was determined at a step SB 7, and the musical piece information on each quality set up at a step SB 8 is transmitted to a user terminal 4 through the Internet 3, and the purchase of musical piece information is urged.

The musical piece related information transmitted here is the information for making the quality list screen display shown in below-mentioned drawing 4 (B) or below-mentioned drawing 4 (C) perform to a user terminal 4. It progresses to the following step SB 10 after that.

[0071] At a step SB 10, the file for displaying on a user terminal 4 an accounting information input screen as shown in drawing 4 (D) which answers the input (step SA 5) of the purchase article decision from a user terminal 4, and is mentioned later is transmitted, and the input of accounting information is urged. It progresses to the following step SB 11 after that.

[0072] At a step SB 11, the accounting information which a user terminal 4 transmits at the step SA 6 of user-terminal side processing is received, and accounting according to the accounting information which this received is performed. It progresses to the following step SB 12 after that.

[0073] At a step SB 12, the musical piece information on the quality determined at the step SA 5 of user-terminal side processing with reference to the translation table shown in drawing 6 (C) based on the information on the purchase article determined at the step SA 5 of user-terminal side processing from the user terminal 4 received at the above-mentioned step SB 10 is

generated from the former musical piece information MO memorized by external storage 16 ( drawing 2 ). It progresses to the following step SB 13 after that.

[0074] As shown in drawing 6 (C), it is determined including the object for cellular phones, and two kinds of tables for electrophones that a translation table will use the table corresponding to a user terminal like a response table. For example, the information about the quality of musical pieces, such as existence of the information about the existence of the number of playback PERT and pitch bend information and a tone and existence of score information, and the price for every quality are recorded on the translation table for cellular phones for every conversion information class of high quality, inside quality, and low quality. Among drawing, "O" shows that the information is not deleted and "x" shows that the information is deleted.

[0075] For example, when changing former musical piece information into the musical piece information on the inside quality for cellular phones, based on the translation table for cellular phones of drawing 6 (C), the number of playback PERT is reduced to two channels, and while deleting the pitch bend information in former musical piece information, score information is deleted. The information about a tone is still former musical piece information. The price of a

price is 120 yen.

[0076] In addition, a translation table may prepare the table for the device which can reproduce the musical sound of the object for cellular phones, and not only the object for electrophones but others. Moreover, you may make it include the price of musical piece information in the response table of drawing 6 (B), and it may prepare another table.

[0077] At a step SB 13, the generated musical piece information is changed into a refreshable file format by the user terminal 4 with reference to the response table shown in drawing 6 (B). Then, it progresses to the following step SB 14.

[0078] At a step SB 14, a user opts for purchase, generates at a step SB 12, and transmits the musical piece information MD which has the quality of the user request changed into a refreshable file format by the user terminal 4 at a step SB 13 to a user terminal 4 through the Internet 3. If transmission is completed, it will progress to the following step SB 15.

[0079] At a step SB 15, management server side processing is reset and it returns to a step SB 1.

[0080] Drawing 4 is the example of the various screen display for musical piece information purchase.

[0081] Drawing 4 (A) is the example of the musical piece information input screen which is transmitted to a user terminal 4 from the management server 2 at the step SB 2 of drawing 3 , and is displayed in the musical piece information purchase homepage on the display 20 of a user terminal 4. In addition, it is not necessary to display a musical piece information input screen in a musical piece information purchase homepage, and it may not necessarily be displayed in another window.

[0082] Singer name input column 26b for inputting musical piece name input column 26a for the message MG 1 for demanding the input of the musical piece demand information RI from a user, such as "please specify a musical piece", being displayed, and inputting a musical piece name, as shown in drawing 4 (A), and a singer name, as for a musical piece information input screen is prepared.

[0083] Furthermore, the switch SW2 described as "CANCEL" for canceling the switch SW1 and input which were described as "O.K." for deciding an input is formed. These switches SW1 and SW2 are operated by cursor 38. In addition, what is necessary is just to prepare the model name input column further, when making a user input a model name etc.

[0084] When a musical piece is inputted into musical piece name input column



26a, or a singer name is inputted into singer name input column 26b, and a user makes it move after that onto the switch SW1 with which cursor 38 was described as "O.K." and clicks by handlers, such as a mouse, with it, the musical piece demand information RI is transmitted to the management server 2 with the terminal information TI.

[0085] Drawing 4 (B) is the example of the quality list which is transmitted to a user terminal 4 from the management server 2 at the step SB 9 of drawing 3 , and is displayed in a musical piece information purchase homepage at steps SA4 and SA5. The quality which can purchase the musical piece information demanded at a step SA 3 shows the case of high quality, inside quality, and low quality where there are three kinds. In addition, although a quality list is replaced with the above-mentioned musical piece information input screen and displayed in a musical piece information purchase homepage, you may make it display it on another window in this example.

[0086] The message MG 2 for demanding selection of a purchase article from a user, such as "please specify a purchase article", is displayed, as shown in drawing 4 (B), a musical piece name and a user-terminal name are displayed on a quality list, and the list DL of an available purchase article is displayed on it by

the user terminal so that a user can check.

[0087] Furthermore, radio button SW3 a-SW3c is displayed on the left of each quality of high quality, inside quality, and low quality which can be purchased.

Moreover, the switch SW2 described as "CANCEL" for canceling the switch SW1 and input which were described as "O.K." for deciding an input is formed.

These switches SW1 and SW2 and SW3 a-SW3c are operated by cursor 38.

[0088] A purchase article is determined when a user clicks any one of the radio button SW3 a-SW3c, and the switch SW1 described as "O.K." by handlers, such as a mouse.

[0089] In addition, the example of a display of above-mentioned drawing 4 (B) is an example when a user terminal is highly efficient, and is shown that it can purchase any information from high quality to low quality a list table in that case.

If a user terminal is neutral ability, since only the information on inside quality and low quality can be treated, as shown in drawing 4 (C), the list DL without the name-of-article display of high quality will be expressed as the terminal. Other display items are common.

[0090] Drawing 4 (D) is the example of the accounting information input screen which is transmitted to a user terminal 4 from the management server 2 at the

step SB 10 of drawing 3 , and is displayed in a musical piece information purchase homepage at a step SA 6. In addition, it is not necessary to display an accounting information input screen in a musical piece information purchase homepage, and it may not necessarily be displayed in another window.

[0091] As shown in drawing 4 (D), the message MG 3 for demanding the input of accounting information from a user, such as "please input accounting information", is displayed, and, as for an accounting information input screen, accounting information input column 26c for inputting accounting information is prepared. Moreover, a musical piece name, quality, and a price are displayed on user validations. Furthermore, the switch SW2 described as "CANCEL" for canceling the switch SW1 and input which were described as "O.K." for deciding an input is formed. These switches SW1 and SW2 are operated by cursor 38.

[0092] If information required for purchase is inputted into accounting information input column 26c, accounting information will be transmitted to the management server 2 by clicking the switch SW1 described as "O.K." by handlers, such as a mouse.

[0093] Drawing 7 is the block diagram showing the outline function of the musical piece information distribution system 1 which consists of a management

server 2, a network 3, and a user terminal 4.

[0094] The management server 2 has the musical piece information storage section 32 which accumulates the former musical piece information MO at least, the musical piece demand receive section 33 which receives the musical piece demand information from a user terminal 4, the accounting section 34 charged to a user, the transmitting section 35 which transmits the musical piece information MD to a user terminal 4 through a network 3, and the musical piece signal transduction section 36 which changes the former musical piece information MO into the musical piece information MD according to a demand of a user or the model of user terminal 4.

[0095] At least a user terminal 4 A demand of a user, directions, And the musical piece information MD The various information for downloading etc. The musical piece demand section 28 for transmitting the terminal information storage section 27, the musical piece demand information RI, and the terminal information TI that terminal information for the input section 26 for inputting and the management server 2 to recognize the model of user terminal 4 etc. is memorized, the purchase setting-out section 29 which transmit and receive information required for accounting, It has the musical piece information storage

section 31 which memorizes the musical piece information MD which the receive section 30 which receives the musical piece information MD through a network 3 from the management server 2, and a receive section 30 receive.

[0096] A user inputs the musical piece demand information RI into the input section 26 of a user terminal 4. The musical piece demand information RI that it was inputted into the input section 26 is sent to the musical piece demand section 28. In the musical piece demand section 28, the terminal information TI on the terminal proper memorized beforehand is transmitted to the management server 2 through a network 3 with read-out and the musical piece demand information RI that it was inputted, from the terminal information storage section 27.

[0097] In the management server 2 side, the musical piece demand information RI transmitted and the terminal information TI are received in the musical piece demand receive section 33. The musical piece demand receive section 33 searches whether the former musical piece information MO that it corresponds to the musical piece demand information RI at the musical piece storage section 32 based on the musical piece demand information RI is memorized. If the former musical piece information MO that it corresponds to the musical piece

demand information RI is not memorized, that is notified to a user terminal 4.

[0098] If the former musical piece information MO that it corresponds to the musical piece demand information RI is memorized, the musical piece demand receive section 33 will determine refreshable musical piece information and its price by the user terminal 4 with reference to the price for every quality currently recorded on the translation table of drawing 6 (C) etc. while judging refreshable quality by the user terminal 4 with reference to the terminal information TI and the response table of drawing 6 (B). The determined quality and a price are transmitted to the accounting section.

[0099] The accounting section 34 transmits the quality of musical piece information, and the list DL of prices ( drawing 4 (C)) to a user terminal 4 based on the directions and information from the musical piece demand receive section 33, and demands the purchase of musical piece information from a user.

[0100] In the purchase setting-out section of a user terminal 4, the quality of musical piece information and the list DL of prices are received, and it displays on a display 20 ( drawing 2 ). A user chooses a purchase article by operating the input section 26 with reference to List DL. The input section 26 transmits the purchase article which the user chose to the purchase setting-out section 29.

The purchase setting-out section 29 transmits the quality of the musical piece information to purchase to the accounting section 34 through a network 3.

[0101] The accounting section 34 issues directions so that the musical piece information MD to transmit may be prepared to the musical piece signal transduction section 36, while urging the purchase setting-out section 29 to transmit accounting information, if the quality of the musical piece information to purchase is received from the purchase setting-out section 29. At this time, the information about the file format of the former musical piece information MO to change and the musical piece information MD which should be changed, quality, etc. is collectively transmitted to the musical piece signal transduction section 36.

[0102] The musical piece signal transduction section 36 reads the former musical piece information MO from the musical piece information storage section 32 based on directions of the accounting section 34. The read former musical piece information MO serves as quality which it is changed based on the translation table of drawing 6 (C), and a user demands, and turns into the musical piece information MD on a refreshable (it is adapted for a user-terminal environment) file format by the user terminal 4 on the response table of drawing 6 (B). The musical piece information MD changed in the musical piece signal

transduction section 36 is sent to the transmitting section 35.

[0103] In addition, it may replace with the musical piece signal transduction section 33, and the musical piece information selection section may be prepared.

The musical piece information selection section chooses and reads refreshable musical piece information from the musical piece information storage section 32 by the user terminal with the demanded musical piece. In this case, in the musical piece information storage section 32, it is [ two or more ] refreshable respectively about two or more musical pieces at the user terminal of a class, and the musical piece information equivalent to two or more kinds of quality is memorized.

[0104] From the accounting section 34, the purchase setting-out section 29 of which transmission of accounting information was required demands the input of accounting information from a user, and a user inputs accounting information by the input section 26. The inputted accounting information is transmitted to the accounting section 34 through a network 3.

[0105] While performing processing required for accounting based on the accounting information which received, directions are taken out with the accounting section 34 to the transmitting section 35 so that the musical piece



information MD may be transmitted to a user terminal 4.

[0106] The carrier beam transmitting section 35 transmits the musical piece information MD for the directions from the accounting section 34 to a user terminal 4 through a network 3.

[0107] The receive section 30 by the side of a user terminal 4 receives the musical piece information MD, and memorizes in the musical piece information storage section 31 one by one.

[0108] As explained above, according to the example of this invention, the musical piece information recorded based on one file format can be changed and distributed to a refreshable file format (for example, electronic compact disc, for cellular phones) by various devices.

[0109] Moreover, according to the example of this invention, the device which a user owns can purchase the musical piece information which corresponds simply also with a telephone or a cellular phone.

[0110] Furthermore, according to the example of this invention, musical piece information can be changed and distributed to various quality (musical piece information which has various amounts of data).

[0111] Moreover, according to the example of this invention, a user can

purchase the musical piece data of desired quality at a suitable price.

[0112] In addition, although the user chose one of the data of the quality of the class prepared beforehand, a user may enable it to choose the content of a modification detail of quality freely in the example. For example, although the data of tone modification are lost, the detail of the content of conversion can be determined in the range in which leaving a pitch bend and sound volume etc. can respond by the user terminal (playback). Accounting is made to perform only the frame according to the content of setting out.

[0113] If it does in this way, a user can obtain easily the musical piece information on the quality which he desires further.

[0114] In addition, in the example, although the quality of musical piece information was changed by informational existence, changing the content of information can also change musical piece information.

[0115] Drawing 8 is the example of the translation table for electrophones in the case of changing the content of information. As shown in drawing, the detail of the content of information is recorded on the table for every quality of conversion information.

[0116] For example, although a limit is given to the resolving power of

pronunciation timing when changing the former musical piece information MO into the musical piece information MD on inside quality, it changes into the data which gave layer and, in the case of low quality, changes into the data which quantized and lost layer.

[0117] Moreover, also in the die length of music, when changing into the musical piece information MD on inside quality, the parts of an intro, an interlude, and ending are shortened and, in the case of low quality, only the one chorus of a musical piece is shortened only into the part of rust.

[0118] Thus, whenever quality falls, it changes so that the amount of data may become less. That is, since there is little amount of data compared with the data of high quality, the data of low quality can also save the time amount concerning download.

[0119] Furthermore, in the example, although the quality and the price of musical piece information were set to three, as long as it sets up the price which suited each quality, how many kinds may be prepared. For example, a quality class can be finely set as the pan instead of three, and a price can also be set up still more finely corresponding to it.

[0120] Moreover, although the former musical piece information MO prepared

the thing of the highest quality, the amount of data of this was reduced and quality was changed in the example, you may decide to raise quality and to create high quality information by preparing the data of low quality or inside quality, and adding a certain information to this as former musical piece information MO. If it does in this way, the capacity of the external storage of the management server 2 can be saved.

[0121] Furthermore, before a user purchases musical piece information, you may make it prepare the audition function which can try listening the musical piece information on each quality. Since a user can check the content and quality of musical piece information which he needs, it further becomes easy to perform selection of suitable quality by doing in this way.

[0122] in this case, the quality which performs the step SB 12 and step SB 13 of drawing 3 between a step SB 9 and a step SB 10, and has the demand of an audition -- and -- or what is necessary is changing into a format and making it just make a user try listening Moreover, it is not necessary to change all the musical piece information into viewing and listening, and you may make it change only a part into it.

[0123] Moreover, although a computer or a Personal Digital Assistant is shown

as a user terminal (information communication terminal), as long as it can download musical piece information, there is a function which carries out an automatic performance and it has a display in the example, what kind of thing may be used. For example, you may apply to a cellular phone and karaoke equipment equipped with the electrophone equipped with the keyboard, or a sound source, game equipment, and an automatic performance piano. When the gestalt of electrophone is taken, the gestalt of not only a keyboard instrument but a stringed instrument type, a wind instrument type, a percussion instrument type, etc. is sufficient as the gestalt. Moreover, what [ not only ] built sound-source equipment, automatic performance equipment, etc. in one body of electrophone but each is equipment of another object, and may connect each equipment using means of communications, such as MIDI and various networks.

[0124] Moreover, you may make it make this example carry out by a commercial general purpose computer or a commercial computer etc. which installed the computer program corresponding to this example etc.

[0125] In that case, where the computer program corresponding to this example etc. is stored in the storage which computers, such as CD-ROM and a floppy (trademark) disk, can read, you may provide for a user.

[0126] When the general purpose computer or computer etc. is connected to communication networks, such as LAN, the Internet, and the telephone line, a general purpose computer or a computer may be provided with a computer program, various data, etc. through a communication network.

[0127] Although this invention was explained in accordance with the example above, this invention is not restricted to these. For example, probably, it will be obvious to this contractor for various modification, amelioration, combination, etc. to be possible.

[0128]

[Effect of the Invention] As explained above, according to this invention, by changing the content of the musical piece information currently prepared beforehand, two or more musical piece information corresponding to the quality of a class can be created, and a user can be shown.

[0129] Moreover, according to this invention, the musical piece information on quality according to a user-terminal class or a receiving environment can be distributed by the suitable amount of accounting according to quality.

[0130] Furthermore, according to this invention, two or more musical piece information on a refreshable file format can be created by the device of a class

by changing the file format of the musical piece information currently prepared beforehand.

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DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

[Drawing 1] It is the block diagram showing an example of the configuration of the musical piece information distribution system 1 by the example of this invention.

[Drawing 2] It is the block diagram showing the concrete hardware configuration of the computer PC which constitutes a user terminal 4 or the management server 2.

[Drawing 3] It is the flow chart which shows the processing performed by CPU14 of the management server 2 and a user terminal 4 in the musical piece information distribution system by the example of this invention.

[Drawing 4] It is the example of the various screen display for musical piece information purchase.

[Drawing 5] It is a diagram showing demand information and terminal information.

[Drawing 6] It is a diagram showing the example of musical piece data, a response table, and a translation table.

[Drawing 7] It is the block diagram showing the outline function of the musical piece information distribution system 1 which consists of a management server 2, a network 3, and a user terminal 4.

[Drawing 8] It is a diagram showing the example of a translation table.



[Description of Notations]

1 -- An information distribution system, 2 -- Information distribution equipment, 3 -- Communication network, 5 [ -- ROM, 13 / -- RAM, ] -- An information communication terminal, 6 -- A wireless receiving station, 11 -- A bus, 12 14 [ -- Detector, ] -- CPU, 15 -- A timer, 16 -- External storage, 17 18 [ -- Sound-source circuit, ] -- A handler, 19 -- A display circuit, 20 -- A display, 21 22 -- A sound system, 23 -- A MIDI interface, 24 -- Electrohone, 25 [ -- The musical piece demand section, 29 / -- The purchase setting-out section, 30 / -- 31 A receive section, 32 / -- The musical piece information storage section, 33 / -- A musical piece demand receive section, 34 / -- The accounting section, 35 / -- The transmitting section, 36 / -- The musical piece signal transduction section, 38 / -- Cursor ] -- A communication link interface, 26 -- The input section, 27 -- The terminal information storage section, 28

